Introduction and Purpose

Geographic Information Systems (GIS) is a technology that allows both spatial and non-spatial data to be stored, analyzed, and viewed in a meaningful way. By creating maps, GIS illuminates relationships between disparate data sets that share a common geographic component.

In this assessment, GIS analyses display information about the NRMOs and CBOs involved in the project and provide insight into the congruence between the location of the CBOs in the sample that provide HIV/AIDS services to populations of color and the status of the AIDS epidemic in the United States. In this executive summary, five maps are included and described.

Methodology

GeoFields, Inc., was contracted to geocode data about the location of CBOs who were sent questionnaires and data about the location of CBOs that responded to the questionnaires they were sent. Geocoding means providing the data with a spatial reference point, for instance, attaching a latitude and longitude that allows the data to be mapped. GeoFields, Inc., and the Spatial Analysis and Information Dissemination Section of the Agency of Toxic Substance and Disease Registry used ArcView 3.1 software to map these locational data in conjunction with population data from the U.S. Census Bureau and Equifax and HIV incidence data from the AIDS Public Information Data Set (AIDS PIDS), a subset of the CDC's HIV/AIDS Reporting System (HARS).

Conclusions

Data concerning the AIDS epidemic among different racial and ethnic populations can be presented in a variety of ways. Depending on the mapping technique used, the mapped data appears quite different. While users of the data may want to use a mapping technique that is supportive of the perspective they are trying to convey to their audience, it is important that users provide their audience with an understanding of how the data were analyzed to create the map.

Given the successes and limitations of the GIS analyses that were performed on the data collected for this assessment, it is recommended that additional GIS-focused projects be conducted to further examine applications of GIS technology for analyzing HIV/AIDS services on the national and local levels.

Explanation of Maps

Common Elements Among Maps:

- In all maps, racial and ethnic minority populations include African-Americans, Latinos, Asians, Pacific Islanders, American Indians, Eskimos, and Aleuts.
- Population data for 1990 are drawn from the 1990 Census, while Equifax provided projected population figures for 1997 (with the exception of 1997 population figures for Puerto Rico, which were drawn from the population estimates of the U.S. Census Bureau).

- To protect confidentiality, the AIDS PIDS does not release information for an area (state, county, Metropolitan Statistical Area) that has 0-3 diagnosed or reported AIDS cases. In the analyses for this assessment, the AIDS PIDS was queried about diagnosed AIDS cases in specific time periods (1990, 1997, and cumulative through 1997) for different populations (total population and each racial and ethnic minority population). If any query had a result of fewer than four cases, AIDS PIDS indicated that no data were available.
- Maps are not drawn to scale.

Special Note about Guam and Puerto Rico:
Since there were no CBOs in the geocoded sample located in Guam, Guam is not included in analyses. Although CBOs located in Puerto Rico were sent and responded to the questionnaire, analyses concerning Puerto Rico were limited because the U.S. Census only collects data about the total population in Puerto Rico; data are not broken down by race/ethnicity. Therefore, Guam and Puerto Rico are included only on selected maps.

In addition, CBOs located in Puerto Rico have been randomly placed on the island because the software used lacked address or zip code level geocoding capabilities for Puerto Rico.

Description of Maps

National and Regional Minority Organizations (NRMOs)
This map displays the location of the 22 NRMOs in the United States. The six NRMOs identified in red are those NRMOs that participated in developing and conducting this assessment. The NRMOs that participated in this assessment represent diverse racial and ethnic groups and were located in several, but not all, geographic regions of the country. (See Appendix B, map 1)

Community-Based Organizations (CBOs) and Service Providers Who Were Sent the Core Questionnaire and CBOs and Service Providers Who Responded to the Core Questionnaire
At the top of the page, the map entitled "Community-Based Organizations (CBOs) and Service Providers Who Were Sent the Core Questionnaire" displays the location of the 1,901 CBOs who were identified as providing HIV/AIDS services to racial and ethnic minority populations and who were sent questionnaires by the NRMOs. These CBOs were geocoded to the address or zip code level. CBOs contacted were located in all regions of the United States, as well as Puerto Rico and Guam. (See Appendix B, map 2)

At the bottom of the page, the map entitled "CBOs and Service Providers Who Responded to the Core Questionnaire" presents data about the location and distribution of those CBOs that were in the sample. Of the 450 CBOs that returned questionnaires, 399 provided information about the location of their CBO that allowed the CBO to be geocoded to the address or zip code level. The 51 CBOs that are not displayed on this map were unable to be geocoded for a variety of reasons, including lack of or incorrect address information provided by the CBO or inability of the software to geocode the address information provided by the CBO. (See Appendix B, map 3)

Total Number of Diagnosed AIDS Cases per 100,000 Population - 1990 and Total Number of Diagnosed AIDS Cases per 100,000 Population - 1997

These two maps illustrate the shift in the distribution of diagnosed AIDS cases for the general population between 1990 and 1997. To calculate the incidence rate, data about the total number of AIDS cases diagnosed in each state in 1990 and in 1997, respectively, were divided by the population of each state in 1990 and 1997, respectively. These maps show that, in general, most states had an equal or lower incidence rate of diagnosed AIDS cases in 1997 than in 1990. (See Appendix B, maps 4 and 5)

Total Number of Diagnosed Minority AIDS Cases per 100,000 Population - 1990 and Total Number of Diagnosed Minority AIDS Cases per 100,000 Population - 1997

These two maps illustrate the shift in the distribution of diagnosed minority AIDS cases between 1990 and 1997. To calculate the incidence rate, data about the total number of AIDS cases diagnosed among minority populations in each state in 1990 and in 1997, respectively, were divided by the total population of each state in 1990 and 1997, respectively. States shaded gray reflect that no data were available from the AIDS PIDS. No available data indicates that 0-3 AIDS cases were diagnosed in that state in that time period. (See Appendix B, maps 6 and 7)

Total Number of Diagnosed Minority AIDS Cases per 100,000 Minority Population - 1997, With CBOs and Service Providers that Primarily or Secondarily Target Minority Populations and Total Number of Diagnosed Minority AIDS Cases per 100,000 Population - 1997

These maps visually contrast the impact of the AIDS epidemic when the population used to calculate the incidence rate is adjusted from total population of each state to the total minority population of each state. (See Appendix B, maps 8 and 9)

In the map at the top of the page, the incidence rate was calculated by dividing the total number of AIDS cases diagnosed among minority populations in each state in 1997 by the minority population of each state in 1997. States shaded gray reflect that no data were available from the AIDS PIDS. No available data indicates that 0-3 AIDS cases were diagnosed in that state in that time period. In addition, data about the location of CBOs in the sample that indicated they primarily or secondarily target racial and ethnic minority populations are overlaid on the map. Layering these data sets allows a comparison of the location of CBOs in the sample with areas having a high incidence of diagnosed AIDS cases in the minority population.

The map at the top of the page is contrasted with a map at the bottom of the page that presents data about the incidence of minority AIDS cases per 100,000 total population in 1997. The incidence rate was calculated by dividing the total number of AIDS cases diagnosed among minority populations in each state in 1997 by the total population of each state in 1997. States shaded gray reflect that no data were available from the AIDS PIDS. No available data indicates that 0-3 AIDS cases were diagnosed in that state in that time period.